Nextiva S1700e Series User Guide

VERINT
POWERING ACTIONABLE INTELLIGENCE®

Nextiva S1700e Series

Firmware Release 4.22

User Guide

Verint Video Solutions

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Contents

Preface ..... **v**
Who Should Read this Guide vi
How to Use this Guide vi
Contents vi
Conventions vii
Related Documentation viii
Related Verint Video Solutions Products viii
About Us viii
Warranty ix

Chapter 1 ■ Overview **1**
About the S1700e Series 2
Physical Characteristics 2
Security 2
Video 3
Shipment 4
Casing Description 4

Chapter 2 ■ Configuring and Installing the Device **7**
Configuring the Device 8
Computer Requirements 8
Assembling the PoE Kit 8
Preparing a 12V DC Device 10
Setting Device Parameters 10
Using the Encoders 13
Performing a Point-to-Point Connection 13
Installing the Device 15
Performing Serial Connections 16
RS-232 16
RS-422/485 17
Multidrop Configurations 18
Configuring the I/Os 19
Audio 19
Alarms 21
Updating the Firmware 22
Performing a Hardware Reset 22
Red/Blue Display 23
Activating Quality of Service 23
Status LED 24

Chapter 3 ■ Using the Web Interface 27
Getting Started 28
Configuring the Device 30
Serial Port 30
Access Management 31
System Status 34
Network 35
Video 36
VSIP 39
Audio 40
System Time 41
HTTP (Webserver) 42
Viewing Live Video 43
Presentation Windows 44
PTZ Controls 45
Appendix A ■ Factory Default Configuration 47
Appendix B ■ DTE and DCE Connections..... 49
Appendix C ■ DHCP Support and APIPA 53
Appendix D ■ Audio Pinouts..... 55
Appendix E ■ CLI Access 57
Network Connection 58
Serial Connection 59
Appendix F ■ RJ-45 Ethernet Cables 61
Appendix G ■ Technical Specifications 63
Glossary 67
Index 75
Compliance 79

Preface

The *Nextiva S1700e Series User Guide* presents the information and procedures on installing, configuring, and using the Nextiva™ S1700e series edge devices.

Who Should Read this Guide

This guide is intended for managers, IT system administrators, engineers, and technicians who will use the S1700e series edge devices. It provides conceptual information on how to configure, install, and operate the devices.

This guide assumes that you are familiar with:

- Installation and manipulation of electronic equipment
- General use of computers
- Local area networks (LANs) and basic IP data communication concepts and practices
- Pan-tilt-zoom (PTZ) platforms (cameras and keyboards)
- Web browsers
- Microsoft Windows operating systems

How to Use this Guide

This guide contains all the information needed to install, configure, and use an S1700e series device.

Contents

The *Nextiva S1700e Series User Guide* is divided into the following chapters:

1. **Overview**—Provides a brief description of the features of the S1700e series and illustrations of its casing.
2. **Configuring and Installing the Device**—Presents the configuration and installation procedures for the S1700e series device.
3. **Using the Web Interface**—Explains how to use the web interface to configure the device and view live video.

The guide also includes the following appendixes:

A. **Factory Default Configuration**—Lists the default parameter values of the S1700e series device.

B. DTE and DCE Connections—Explains how to differentiate and connect data terminal equipment (DTE) and data communication equipment (DCE).

C. DHCP Support and APIPA—Explains how the DHCP server and the Microsoft APIPA addressing scheme work.

D. Audio Pinouts—Presents the pinouts for audio input/output.

E. CLI Access—Explains how to access the command line interface (CLI) of the device.

F. RJ-45 Ethernet Cables—Presents the pinouts of the straight-through and crossover Ethernet cables.

G. Technical Specifications—Lists the complete technical specifications of the S1700e series device.

A glossary, an index, and compliance information complete the guide.

Conventions

The following typographic conventions are used throughout this guide:

Visual cue	Meaning
Connect	The name of an interface element you have to act on. A key to press. The value of an interface element.
connection_name	Text that must be replaced by a user-supplied value. Text representing variable content.
`S1700e.vf`	The name of a command, file, or directory. Text that appears on the screen. Examples of user-supplied values.

Related Documentation

In addition to this guide, the following documentation is also available:

- *Nextiva S1700e Series Installation Guide*
- *SConfigurator User Guide*
- *Release Notes*

All these documents are contained on the *SmartSight Utilities* CD shipped with the device. Furthermore, a paper copy of the installation guide is included with your order.

Related Verint Video Solutions Products

You may use the S1700e series devices with the S1500e-R video receivers. You may also use them with the nDVR™ and Nextiva enterprise video management solutions. For more details, visit our web site. For pricing information, call your dealer.

About Us

Verint Systems (NASDAQ: VRNT) is a leading global provider of video security, surveillance and business intelligence solutions. Verint Video Solutions transform digital video into actionable intelligence: timely, mission-critical insights for faster, more effective decisions.

Today, more than 1000 companies in 50 countries use Verint Systems solutions to enhance security, boost operational efficiency, and fuel profitability.

Web Site

For information about the Nextiva line of products, visit www.verint.com/videosolutions.

To download data sheets and user documentation, use the following link: www.verint.com/smartsight/support.

To request the latest versions of firmware and software or to download other product-related documents, you need access to the Verint Video Solutions partner extranet. To register, go to http://vvs.verint.com.

Support

If you encounter any type of problem after reading this guide, contact your local distributor or Verint Video Solutions representative. You can also use the following sections on the Verint Video Solutions partner extranet to find the answers to your questions:

- SmartSight FAQ
- SmartSight Requests
- SmartSight My Account

For assistance with the Nextiva edge devices and the related software, contact the Verint Video Solutions customer service team:

- By phone: 1 888 494-7337 option 1 (North America) or +1 450 686-9000 option 1, Monday to Friday, from 8:30 to 17:30 EST
- By fax: +1 450 686-0198

Warranty

Each product manufactured by Verint Systems is warranted to meet all published specifications and to be free from defects in material and workmanship for a period of three (3) years from date of delivery as evidenced by the Verint Systems packing slip or other transportation receipt. Products showing damage by misuse or abnormal conditions of operation, or which have been modified by Buyer or repaired or altered outside Verint Systems factory without a specific authorization from Verint Systems shall be excluded from this warranty. Verint Systems shall in no event be responsible for incidental or consequential damages including without limitation, personal injury or property damage.

The warranty becomes void if the product is altered in any way.

Verint Systems responsibility under this warranty shall be to repair or replace, at its option, defective work or returned parts with transportation charges to Verint Systems factory paid by Buyer and return paid by Verint Systems. If Verint Systems determines that the Product is not defective within the terms of the warranty, Buyer shall pay all handling and transportation costs. Verint Systems may, at its option, elect to correct any warranty defects by sending its supervisory or technical representative, at its expense, to customer’s plant or location.

Since Verint Systems has no control over conditions of use, no warranty is made or implied as to suitability for customer’s intended use. There are no warranties, expressed or implied, except as stated herein. This limitation on warranties shall not be modified by verbal representations.

Equipment shipped ex works Verint Systems factory shall become the property of Buyer, upon transfer to the common carrier. Buyer shall communicate directly with the carrier by immediately requesting carrier’s inspection upon evidence of damage in shipment.

Buyer must obtain a return materials authorization (RMA) number and shipping instructions from Verint Systems prior to returning any product under warranty. Do not return any Verint Systems product to the factory until RMA and shipping instructions are received.

1

Overview

Designed for video monitoring and surveillance over IP networks, the S1700e series edge device is a self-contained solution delivering DVD quality, 4CIF video at 30 frames per second in NTSC (25 frames in PAL) over 10/100Base-T networks. Two compression modes are available: a proprietary MPEG-4-based mode and the MPEG-4 ISO 14496-2 compliant mode. The device can easily be extended over local and wide area networks (LANs and WANs) or the Internet using ISDN, PSTN, or xDSL routers. It is built on open standards to provide long-term investment protection.

You can use the S1700e series edge devices in point-to-point contexts as well as with video management and storage applications. Furthermore, they enable configuration and video viewing from web browsers.

This device is for indoor use only.

About the S1700e Series

Each device is configured to interface, right out of the box, with the most popular camera data port configuration (4800 baud, 8 data bits, no parity, 1 stop bit).

Physical Characteristics

The S1700e series currently holds a single transmitter, the S1700e-T. It offers the following features:

- One video input
- The choice of either 48V DC power over Ethernet (PoE) or 12V DC
- Three dry contacts for input and one relay output
- One optional pair of audio I/O connectors
- Two independent serial ports for the RS-232 and RS-422/485 protocols
- A reset button

You can also purchase a 12V DC device without audio with the extended temperature option (*-XT*).

Unless otherwise specified, the word *S1700e* refers to any of these devices.

Security

Every edge device comes with a unique SSL (Secure Sockets Layer) certificate for securing its IP link. SSL is a commonly used protocol for managing the security of IP message transmission. Therefore, the connections with another device, the SConfigurator tool, or a video management software can be secured.

If enabled, the SSL protocol secures the following data: I/O, serial port, and VSIP (a proprietary protocol) communication. It does not apply to audio and video transmission.

Once a device is in secure mode, you cannot access it anymore with Telnet, you access its web interface in secure mode only, and you cannot perform firmware updates through the IP network on it. However, you can configure it with SConfigurator.

For more information about this security feature, refer to the *SConfigurator User Guide*.

Video

The video frame rate of the edge device can be:

- NTSC—1 to 7, 10, 15, or 30 frames per second (fps)
- PAL—1 to 6, 8, 12, or 25 fps

The S1700e devices can have the following video resolutions:

Resolution	Number of columns	Number of lines	
	NTSC/PAL	NTSC	PAL
QCIF	176	128	144
CIF	352	240	288
2CIFH	704	240	288
4CIF	704	480	576
All lines	352	480	576
2/3 D1	480	480	576
VGA	640	480	576

The maximum frame rates (in frames per second) for the two available compression modes are:

Resolution	MPEG-4-based mode		MPEG-4 ISO 14496-2 compliant mode	
	NTSC	PAL	NTSC	PAL
QCIF	30	25	30	25
CIF	30	25	30	25
2CIFH	30	25	30	25
4CIF	30	25	15	12.5
All lines	30	25	30	25
2/3 D1	30	25	30	25
VGA	30	25	30	25

For more information about these video parameters, refer to the *SConfigurator User Guide*.

Shipment

Your S1700e shipment contains the following items:

- The requested transmitter device
- Either a power-over-Ethernet kit (injector and power cord) or a 12V DC external power supply
- The *SmartSight Utilities* CD containing the release notes and documentation for the device as well as the SConfigurator application
- The *S1700e Series Installation Guide*

The shipment may also contain the following option:

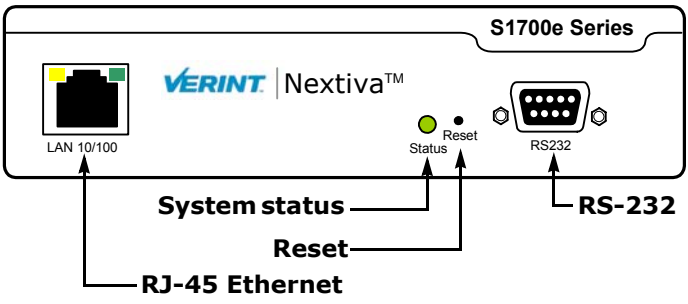
- A 10-device rack mount panel (*SRM10*)

Casing Description

The S1700e electronics are enclosed in a non-weatherproof steel casing that is not meant for outdoor use.

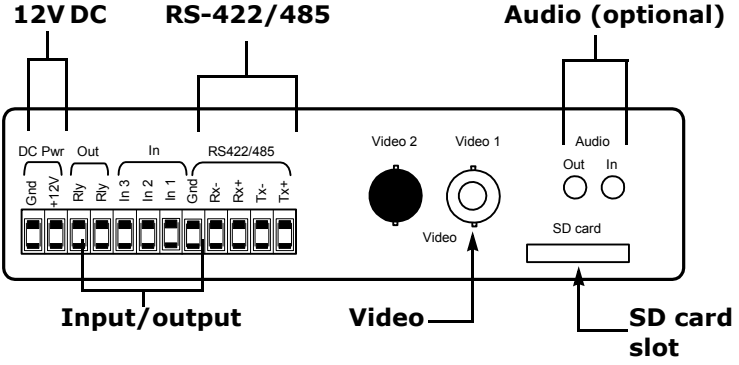
The front panel consists of:

- An RJ-45 jack for PoE or the Ethernet network
- A system status LED
- A reset button
- A DB-9 connector for the RS-232 serial port



The back panel consists of:

- A 12-pole connector for power, dry-contact input, relay output, and RS-422/485 serial port
- One BNC connector for video input
- Optional audio connectors
- A slot for an SD device (for future development)



2

Configuring and Installing the Device

The steps required to prepare your S1700e device for operation are:

- Basic configuration, mainly for communication and serial connection
- Physical installation in its final location
- Alarm and audio configuration
- Connection to the serial ports

Remember that your device is an indoor product that should not be used in an outdoor environment.

Configuring the Device

The configuration steps to execute are:

- Assembling the power-over-Ethernet kit (on the PoE devices only)
- Setting a series of parameters, including the IP address
- Establishing a point-to-point connection between a receiver and a transmitter, if required

To configure the device, you need the proprietary SConfigurator tool. It is included on the *SmartSight Utilities* CD shipped with your device; you can also find its latest version on the Verint Video Solutions extranet (Technical Support, then Downloads, then Firmware Upgrades). You have to copy its executable file to the hard disk of your computer.

Computer Requirements

The minimum hardware and software requirements for the host computer needed to configure the edge device are:

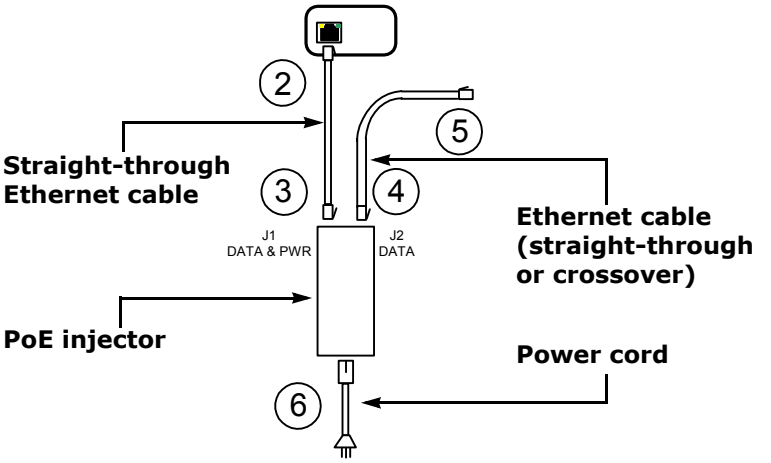
- An Ethernet network card
- A serial port (not through a USB converter)
- Internet Explorer 6.0
- Microsoft DirectX 8.1
- Windows 2000 Service Pack 2 or higher, or Windows XP Service Pack 2

Assembling the PoE Kit

You use the supplied power-over-Ethernet (PoE) kit to power the S1700e-PoE device and establish the Ethernet connection. The PoE kit contains two items: an injector and a power cord.

Warning: On a PoE device, never connect an external power supply in the DC Pwr poles on its back.

To assemble the PoE kit:



1. In a lab, unpack the device and its PoE injector and place them on a table.
2. Plug a straight-through Ethernet cable into the LAN 10/100 connector on the front of the S1700e device.

   Note: The maximum length of this cable is 164 feet (50 meters).
3. Plug the other end of the cable into the DATA & PWR port of the injector.
4. Connect a second Ethernet cable (straight-through or crossover) into the DATA port of the injector.

   The crossover cable is to directly connect the device to a computer; the straight-through cable is to integrate the S1700e on a network. For their detailed pinouts, see page 61.

   Note: The maximum length of this cable is 82 feet (25 meters).
5. Connect the other end of the second cable into an Ethernet device (for example, a switch) or a computer.

   Warning: To avoid damaging your Ethernet equipment, ensure that the cable is connected into the DATA port of the PoE injector, and not in the DATA & PWR port.

6. Power the S1700e transmitter by plugging the power cord between the injector and the outlet.

Preparing a 12V DC Device

To prepare a 12V DC device for configuration:

1. In a lab, unpack the S1700e and place it on a table.

2. Establish the Ethernet connection by plugging a cable (crossover or straight-through) into the LAN 10/100 connector on the front of the device.

The crossover cable is to directly connect the device to a computer; the straight-through cable is to integrate the S1700e on a network.

Warning: Never plug a PoE injector into the LAN 10/100 connector on an S1700e-12VDC device. Otherwise, the device will be damaged and the warranty becomes void.

3. Power the device. If you are using the supplied power supply:

a. Plug the power supply wire with the dashed white lines in the GND pole on the back of the device.

b. Plug the other power wire in the +12V pole on the back of the device.

c. Connect the electric plug into the outlet.

For any other power supply, refer to the manufacturer documentation for the proper wiring scheme.

Setting Device Parameters

The first step in installing an S1700e device is to change its IP address to ensure compatibility with an existing network. The default IP addresses of all devices are based on the APIPA addressing scheme and will be in the range 169.254.*X*.*Y*, where *X* and *Y* are relative to the MAC address of the individual device; for more information about APIPA, see page 53.

To work properly, devices on the same network must have unique IP addresses. The device will not prevent you from entering a duplicate address. However, its system status LED will turn to flashing red; then the device will use an APIPA address.

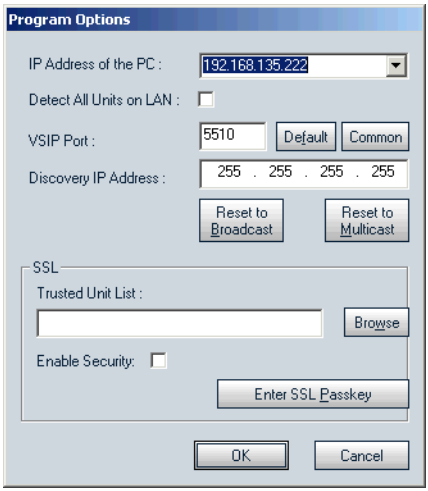
Next, you have to set the serial port parameters of the device.

To set the parameters of a device:

1. Ensure that the device has power and is connected to the network.
2. Start SConfigurator.

   The SConfigurator window appears.
3. In the General tab, click **Program Options**.

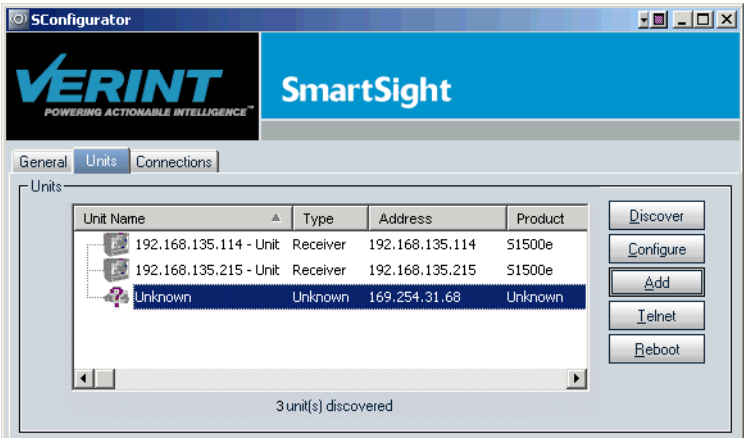
   The Program Options window appears.



4. Check **Detect All Units on LAN**.
5. Ensure that the **VSIP Port** is 5510; otherwise, click **Default**.
6. Ensure that the **Discovery IP Address** is 255.255.255.255; otherwise, click **Reset to Broadcast**.
7. Click **OK**.

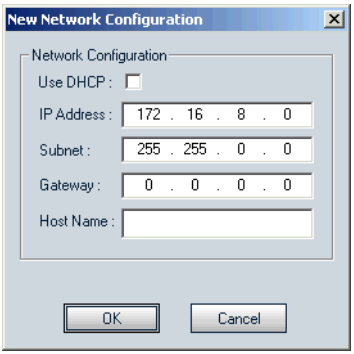
8. Select the **Units** tab, then click **Discover**.

A device of type "Unknown" with a 169.254.*X*.*Y* IP address appears in the list; it corresponds to your new device.



9. Select the unknown device, then click **Configure**. In the Reconfigure unit? confirmation window, click **Yes**.

The New Network Configuration window appears.



10. To use DHCP (Dynamic Host Configuration Protocol), check **Use DHCP**. Otherwise, enter the IP address, subnet mask, and gateway of the device, as provided by your network administrator.

For more information about DHCP, see page 53.

11. Click **OK**.

The device reboots with its new network configuration.

12. In the Units tab, click **Discover**.

    The new S1700e device appears.

13. Select the device, then click **Configure**.

14. Configure the serial port parameters to match those of the target equipment (for instance, camera or PTZ keyboard).

    For more information, refer to the *SConfigurator User Guide*.

The S1700e initial configuration is now complete. You perform further configuration with the web interface (see page 27), SConfigurator, or a video management software from Verint Video Solutions.

Using the Encoders

The incoming stream of a video input is sent to two separate encoders. You can have the following scenarios with regards to the encoder use:

Scenario	Encoder 1	Encoder 2
point-to-point	point-to-point	unused
video management software	view at rate A	record at rate B
web interface	web viewing	point-to-point

Note: You cannot use the web interface and a video management software at the same time.

Performing a Point-to-Point Connection

To view video on a monitor in a point-to-point context (as opposed to using a video management software), you have to create a fixed connection between an S1700e transmitter and an S1500e receiver. Typically, both devices sit on the same IP subnet as SConfigurator and have the same VSIP port; to access other devices, refer to the device discovery section in the *SConfigurator User Guide*.

Note: The receiver must be running firmware version 3.10 or higher.

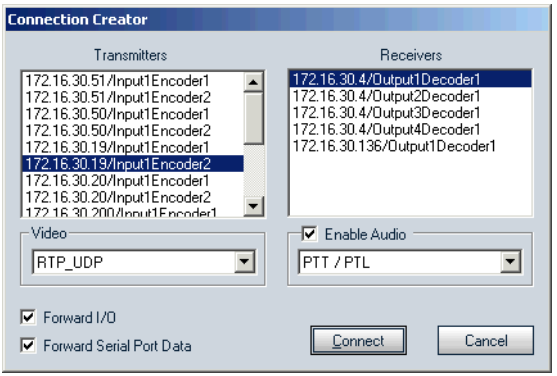
For more information about the connection procedure or the video modes, refer to the “Managing Connections” chapter, in the *SConfigurator User Guide*.

To perform a point-to-point connection:

1. Start SConfigurator.
2. In the Units tab, discover the desired devices.

   The discovered devices appear in the Units box.
3. Select the **Connections** tab, then click **Add**.

   The Connection Creator window appears.



4. Select a transmitter in the left column and a receiver in the right one.

   In the Transmitters column, you have access to the two encoders of each input; the video stream is the same for both. Stream1 is typically reserved for web viewing, therefore you should use Stream2 for point-to-point connections.
5. In the **Video** list, select the desired video mode.
6. To disable I/O data transmission (for example, alarms) between the two selected devices, clear **Forward I/O**.
7. To disable serial port data transmission (like PTZ commands), clear **Forward Serial Port Data**.
8. To enable audio between the devices, ensure that **Enable Audio** is checked, then select the audio mode.
9. Click **Connect**.

You should now have video on the monitor connected to the receiver.

Installing the Device

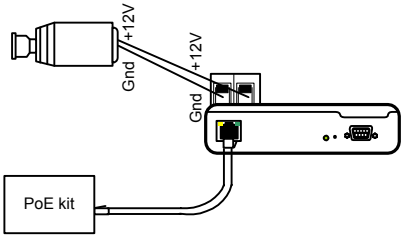
When your device is successfully configured, it is ready to be installed in its final location.

If your S1700e device is powered using PoE, you can use the two DC Pwr poles on the back of the device to power a camera. The supply voltage of the camera must be 12V DC +/- 10%; its maximum power consumption must be 5W (417 mA). Use the following sample values to estimate the maximum length of the camera power cable:

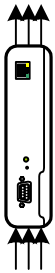
Gauge	Maximum length
16 AWG	300 feet (91.5 meters)
18 AWG	200 feet (61 meters)
22 AWG	80 feet (24 meters)
24 AWG	50 feet (15.25 meters)

To install the device:

1. Plug the video cable of the camera to the video input connector on the device.
2. On a PoE device, power it and connect it to the network using the PoE kit.
3. On a 12V DC device, power it with a power supply, then plug the straight-through or crossover network cable to the LAN 10/100 connector.
4. If required on a PoE device, connect the power wires of a camera to the DC Pwr poles on the connector on the back of the device.



5. If required, connect the serial port of the S1700e to a PTZ camera (for instructions, see next).
6. When installing a device with the extended temperature option, make it stand vertically, allowing for better cooling.



Performing Serial Connections

The Nextiva edge devices support only the RS-232, RS-422, and RS-485 asynchronous protocols. For any other protocol, you may need a converter.

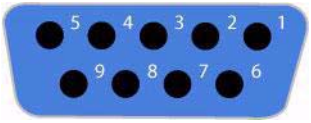
The S1700e device holds connectors for two serial ports: RS-232 and RS-422/485.

RS-232

Use the following wiring scheme to plug a serial cable to the DB-9 connector on the front of the device:

DB-9 pin number	Cable signal name
2	RxD
3	TxD
5	Signal ground
7	RTS
8	CTS

The numbering of the pins on the DB-9 connector is:



RS-422/485

Most target devices (keyboards, PTZ cameras) use the RS-422/485 protocol for communication. These devices are categorized DTE (data terminal equipment); for more information about DTE and DCE (data communication equipment), see Appendix B on page 49.

To use the RS-422/485 functionality, you need to:

1. Connect a twisted pair cable to the multipole connector on the back of the device. The connector gives access to the Tx+, Tx-, Rx+, Rx-, and ground signals.
2. Select the right operating mode (RS-422 4 wires, RS-485 2 wires, or RS-485 4 wires) using SConfigurator, the web interface, or a video management software.

To properly make the connection to a four-wire RS-422 or RS-485 serial device, use the following scheme (where the Tx connectors are for input and the Rx connectors are for output):

Peripheral connector	S1700e connector
Tx+	Tx+
Tx-	Tx-
Rx+	Rx+
Rx-	Rx-
ground	ground

For a two-wire RS-485 connection with a Nextiva device:

1. Create the Data- signal by shorting the Rx- and Tx- pins together.
2. Create the Data+ signal by shorting the Rx+ and Tx+ pins together.

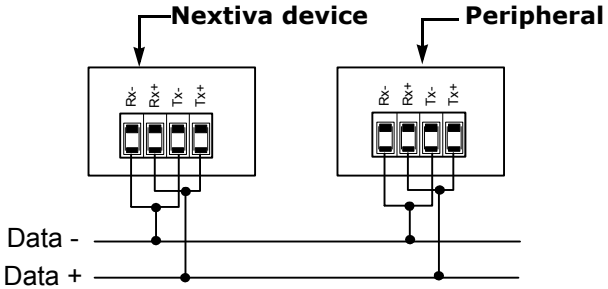
3. Use the following wiring scheme:

Peripheral connector	S1700e connector
Data+	Data+
Data-	Data-
ground	ground

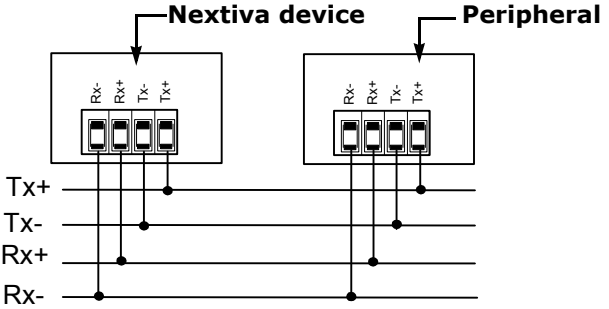
Multidrop Configurations

Two multidrop configurations are available, for two or four wires, only with the RS-485 protocol.

The two-wire configuration is:



The four-wire configuration is:



Configuring the I/Os

The input/output features on the multipole connector on the back of the device are used for alarms (or events) and audio control. The device includes three input and one output terminals. Each terminal has a dedicated purpose:

- Input 1—Either transparent alarm links or PTL (push-to-listen) audio transmission mode
- Input 2—Either alarms in a video management software or PTT (push-to-talk) audio transmission mode
- Input 3—Alarms in a video management software
- Output 1—Relay for the input 1 signal of the remote device

You can program PTL and an alarm on input 1 at the same time. The relay of the remote device will be closed and PTL will be activated.

Since the S1700e devices are mostly used with a video management software, you will perform most configuration and activation steps within it. Otherwise, in a point-to-point context, use SConfigurator for setup.

Audio

If you purchased the audio option, your device holds two 3.5 mm jacks. Appendix D on page 55 presents the jack pinouts.

Data Transmission

Two transmission modes for audio data are available:

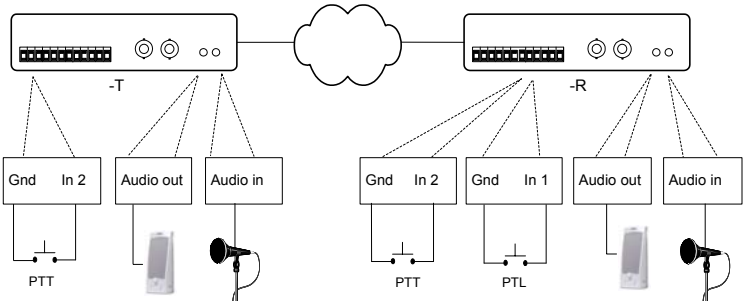
- Full duplex—Data is transferred in both directions simultaneously.
- PTT/PTL—The push-to-talk/push-to-listen mode allows you to control audio communication between two devices.

When creating a point-to-point connection between a receiver and a transmitter in SConfigurator, you set the transmission mode in the Connection Creator window.

To activate the audio transmission channel for PTT on the S1700e transmitter, you must trigger an activation switch (for example, a button) that is based on the shorting of the input 2 and ground terminals.

If the PTT switches of both the transmitter and receiver are activated at the same time, the receiver will have precedence: Audio will be transferred from the receiver to the transmitter. If the PTL and PTT functions of the receiver are activated at the same time, PTT will be activated and PTL will be ignored.

Here is a typical PTT/PTL application in a point-to-point context:

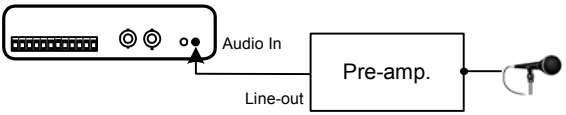


Audio Input/Output Types

The device supports the following audio input types:

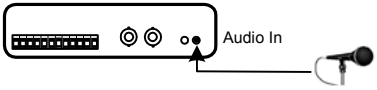
- Line-in—To use a 3.5 mm jack (default).

  In this mode, you need a pre-amplifier. You connect the audio input on the device to the Line-out connector on the pre-amplifier.



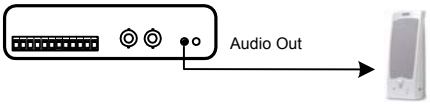
- Mic (with pre-amp)—To use a multimedia microphone (Electret). Most multimedia microphones use a 3.5 mm jack.

  You connect the microphone directly in the audio input of the device.



With SConfigurator, you set the input type in the Audio pane.

The only available output type is Speaker: You plug a speaker directly on the audio output of the device.



In the Audio pane of the SConfigurator tool, you can set one output setting, the volume.

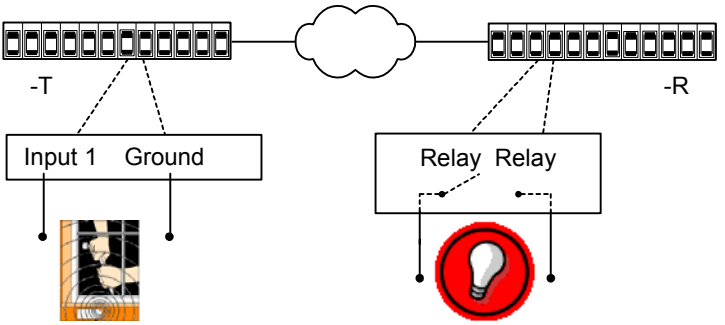
Specifications

The audio input/output specifications are (where 0 dBV = Vrms):

Mode	Gain	Impedance	Frequency range
Mic	-38 to -21 dBV	30 kohm	300–3600 Hz
Line-in	-20 to -3 dBV	30 kohm	
Speaker	-45 to -3 dBV	8 ohms min.	

Alarms

The S1700e devices can generate and receive alarms. A typical configuration requires you plug an event sensor to the input 1 and ground I/O terminals on the S1700e transmitter, and your alarm system to the Out section of a receiver. For example:



With SConfigurator, you activate the alarm process by checking the Forward I/O box in the Connection Creator window.

Updating the Firmware

You can update the firmware of the S1700e devices with the SConfigurator utility or a video management software; for the detailed procedure, refer to the documentation of the software. The latest firmware files are available on the Verint Video Solutions extranet (Technical Support, then Downloads, then Firmware Upgrades).

Warning: Firmware downgrade is not supported on any device. If you perform a downgrade, any problem encountered will not be covered by your product warranty.

The preferred method to update the firmware of the S1700e device is through an IP network connection. If this update procedure fails:

1. Restart the same procedure immediately.
2. If the problem persists, move the device so that it is in the same IP subnet as the host computer, then restart the procedure.
3. If the problem persists, perform a firmware update through the RS-232 serial port.

You should take into consideration the following facts regarding firmware update using the IP network:

- It can be deactivated in the CLI or the web interface.
- Ensure that the IP link is stable before starting the procedure; therefore it is not recommended to perform it over the Internet.

Performing a Hardware Reset

You can perform a hardware reset on the device. This operation will assign the factory default settings to the device (listed in Appendix A on page 47). All user-defined values will be lost.

Following a reset, you will need to reprogram the S1700e device (for instance, its IP address and VSIP port) for proper operation within its network.

To perform a hardware reset:

1. Press and hold the Reset button located on the front panel of the device, until the system status LED flashes red very rapidly (it can take up to 10 seconds).
2. Hold the button for an additional five seconds, until the LED turns off.

The device is ready for use with the factory default settings.

Red/Blue Display

If a S1700e transmitter currently streaming to a video management software loses its connection to a camera, the corresponding display tile will present a half red, half blue/black pattern.

Activating Quality of Service

Quality of Service (QoS) is a set of low-level networking protocols giving higher priority to more important data flows while ensuring that the less important ones do not fail. QoS is an essential technology for organizations rolling out a new generation of network applications such as real-time voice communications and high-quality video delivery.

In the Nextiva edge devices, the two available QoS flavors are Type of Service (ToS) and Differentiated Service Code Points (DSCP).

For QoS to be taken into account, the network infrastructure equipment (switches and routers) must support one of these protocols. If any of these devices does not support QoS, the QoS data will simply be processed as traditional non-QoS data. Furthermore, all Nextiva edge devices on a network must support the same QoS protocol (or no protocols at all).

You can set a priority flag to three data types coming out of an edge device: video, audio, and control. A QoS-enabled switch (or router) uses this flag to determine how the current data compares to what is currently going through it.

To set the QoS values, you need to go in the command line interface (CLI) of the device, access the Advanced menu, then the Quality of Service menu. For the procedure to access the CLI, see page 57.

Status LED

The system status LED is a bicolor (green-red) LED providing detailed information on the current state of the device.

Condition	Indication
Steady red for 5 sec.	The device is powering up.
Flashing red (1 sec. intervals)	The IP address of the device is already assigned to another device on the network.
Flashing green (3 sec. intervals)	The firmware has started, but the device is not connected to the network.
Flashing green (1 sec. intervals)	The firmware has started, the device is connected to the network, but no video/audio/serial* data is transmitted.
Flashing green (0.2 sec. intervals)	The firmware has started, the device is connected to the network, and video/audio/serial* data is transmitted.
Three consecutive red blinks every 2 sec.	No video source is detected and no video is transmitted.
Flashing green-red (1 sec. intervals)	The device is undergoing a firmware update.
Flashing red (0.1 sec. intervals)	The device is being identified.

* At least one of them must be transferred to obtain the LED condition.

The following power-up conditions on the system status LED are abnormal:

- LED not lit—Check the power supply and cabling. If power is available and the LED stays off, call Verint Video Solutions customer service for assistance.
- Steady red LED persisting more than 10 seconds—There is an internal error that prevents the device from starting normally. Power down the device, wait 30 seconds, then power it up. If the condition persists, call Verint Video Solutions customer service.

- Flashing green-red LED not during a firmware update—The device is in backup mode; you will need to perform a firmware update using a serial connection.

3

Using the Web Interface

You can access the S1700e-T with a web browser for live viewing, configuration, or PTZ control. The S1700e supports the Pelco P and Kalatel PTZ protocols.

Getting Started

Depending on user account and security settings, you may have to provide a user name and password when logging into the web interface, or access it in secure mode.

If you upgraded your device from a previous firmware release, perform the following steps prior to using the web interface:

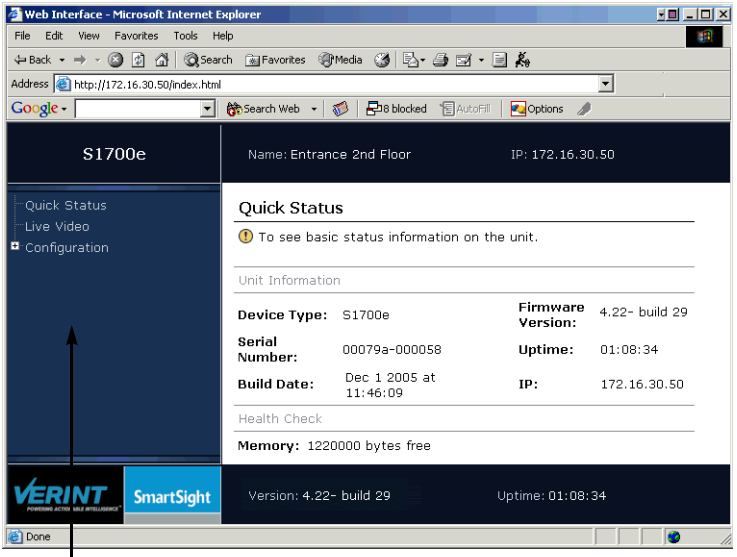
1. Open an Internet Explorer window.
2. Delete the Internet cache:
   a. On the **Tools** menu, open **Internet Options**.
   b. In the **Temporary Internet files** box of the General tab, click **Delete Files**.
   c. In the Delete Files window, check **Delete all offline content**, then click **OK**.
3. In the `Downloaded Program Files` folder on your computer (under either `C:\Windows` or `C:\WINNT`), delete the `SnPlayer Control` file.
4. In your Internet Explorer window, enter the IP address of the device using the `http://`*`IP_address`* format. If prompted when accessing the live video data, choose to install the `SnPlayer Control ActiveX` file (the file may install on its own).

   Note: You may need to lower the security level in your web browser to be able to install the ActiveX component. If the component is not installed, you will not see any video.

To use the web interface:

1. Start your Internet web browser.
2. In the **Address** box, enter the IP address of the device using the `http://IP_address` format.

   The web interface window appears, presenting three types of information in the navigation pane.



   - Quick Status—Basic information on the device
   - Live Video—The video stream coming out of the camera connected to the S1700e transmitter
   - Configuration—A series of parameters to configure the device

3. To access the quick status or live video, click the corresponding node in the navigation pane.
4. To configure the device:

   a. Expand the **Configuration** node by clicking the plus (+) sign to its left, then make the necessary changes.

   b. Click **Apply**.

Configuring the Device

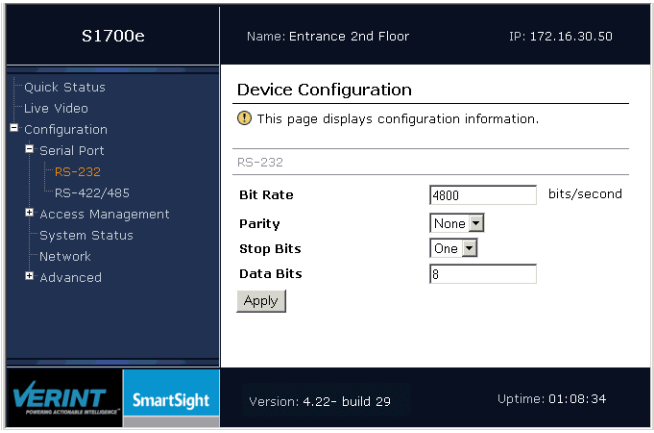
You have access to the following parameter categories:

- Serial port
- Access management
- System status
- Network
- Video
- VSIP
- Audio
- System time
- HTTP

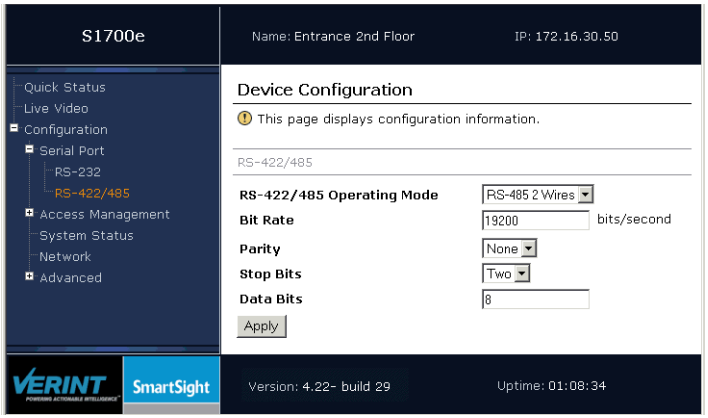
Serial Port

The device has two serial ports, RS-232 and RS-422/485, for communicating with serial equipment (for example, PTZ cameras). For more information about the serial port settings of the specific product with which you want to interface, refer to its user guide or contact your product manufacturer.

The RS-232 parameters are:



The RS-422/485 parameters are:



- RS-422/485 Operating Mode—The way the RS-422/485 equipment will interface with the device.
- Bit Rate—The data rate of the target equipment. Possible values range from 1200 bps to 230,400 bps (for a transmitter) or to 115,200 bps (for a receiver).
- Parity—Odd, even, or no parity check.
- Stop Bits—The number of stop bits in each transmission.
- Data Bits—The number of bits in transmitted data.

Access Management

Access management takes care of user accounts and device security.

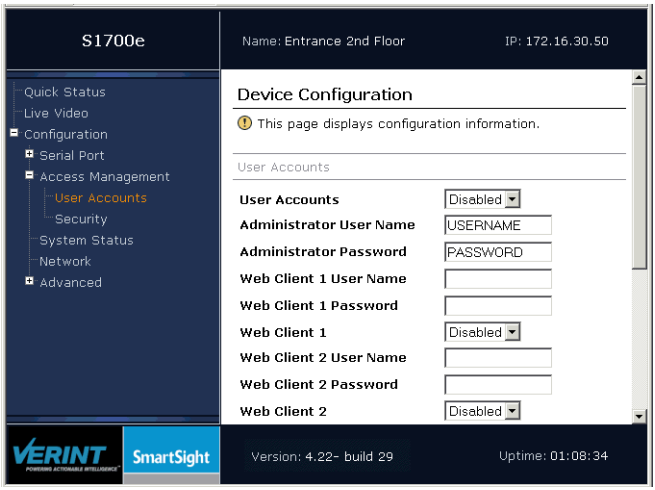
User Accounts

With user accounts, you can protect the configuration of the device by restricting its access with a user name and a password. Once the user account mode is activated, you need the user name/password combination to access the command line interface (CLI) of the device and the web interface.

Two types of users are available:

- Administrator—Has all rights and is automatically available when user accounts are activated.
- Web client—Only has access to live video and quick status in the web interface. Five web clients are available.

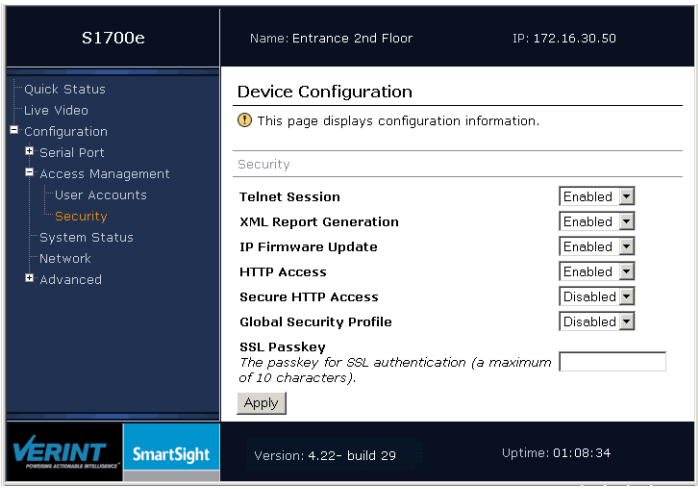
The user account parameters are:



- User Accounts—To enable or disable the use of user names and passwords to access the device with the web interface or the command line interface. If disabled, anybody can access the device.
- *UserType* User Name—An alphanumeric string identifying a web interface user.
- *UserType* Password—An alphanumeric string of at least four characters long protecting the access to the device.
- Web Client *x*—To allow a web client to access the web interface.

Security

The security settings are relative to the protection of the device:



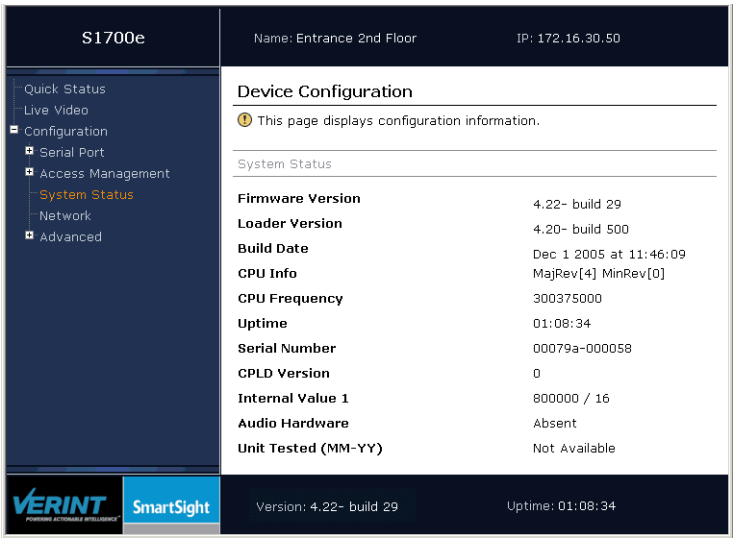
- Telnet Session—To enable or disable the access to the CLI of the device with Telnet. If disabled, you have to access the CLI through a serial connection.
- XML Report Generation—To enable or disable the generation of an XML report presenting the current state of the device.
- IP Firmware Update—To enable or disable the performance of firmware updates on the device through the IP network.
- HTTP Access—To enable or disable the access to the web interface of the device. If you block this access, you can only set up the device with SConfigurator, a serial connection, or Telnet.
- Secure HTTP Access—To enable or disable the access to the web interface of the device in a secure SSL context. If this context is enabled, you access the device with `https://` in your web browser and the user account mode is automatically activated (described on page 31).

- Global Security Profile—To enable or disable the complete SSL security on the device. Once this profile is activated on a device:
  - You cannot access it anymore with Telnet.
  - You cannot perform firmware updates through the IP network on it.
  - You access its web interface in a secure mode (that is, the secure HTTP access mode is enabled).
- SSL Passkey—The password to secure the connection with the device. The passkey must be the same for all devices and the software tools to allow proper secure communication between them.

  Warning: You should not change this passkey with the web interface, since there could be eavesdropping on the network. The most secure method is through the CLI of the device, with a serial connection. You can also use SConfigurator or a video management software.

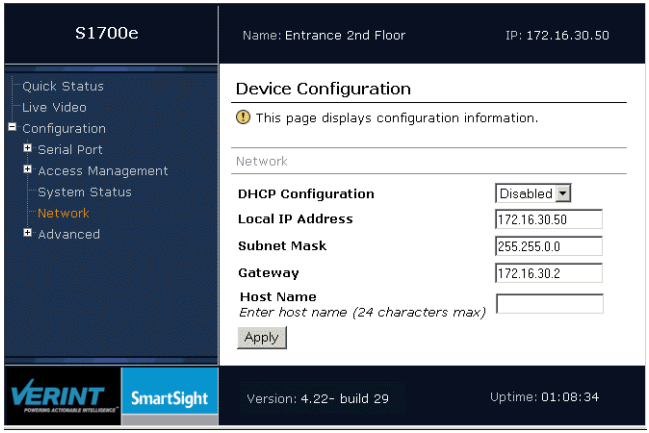
System Status

The system status information indicates the current values of internal device parameters.



Network

The Network menu allows you to configure several parameters to ensure compatibility between the device and its IP network. The parameters are:



- DHCP Configuration—To enable or disable the use of DHCP (Dynamic Host Configuration Protocol) to automatically get a valid network configuration for the device from a server. You can set this option only if the device is connected to a network that uses a DHCP server. For more information about DHCP, see Appendix C on page 53.
- Local IP Address—The unique IP address of the device on the network. The IP address format is a 32-bit numeric address written as four numbers separated by periods. Each number is in the 0–255 range. Each device on a network must have a unique IP address.
- Subnet Mask—The binary configuration specifying in which subnet the IP address of the device belongs. A subnet is a portion of a network that shares a common address component. Unless otherwise specified by your network administrator, it is recommended to use a subnet mask of 255.255.255.0.
- Gateway—The IP address of the network point that acts as an entrance to another network. Never use the IP address of the device as the gateway value.

- Host Name—An alias for the IP address of the device. It is made up of 2 to 24 alphanumerical characters; the first one must be a character. This parameter is optional.

  Note: It is up to the DHCP server to register the host name in the DNS server.

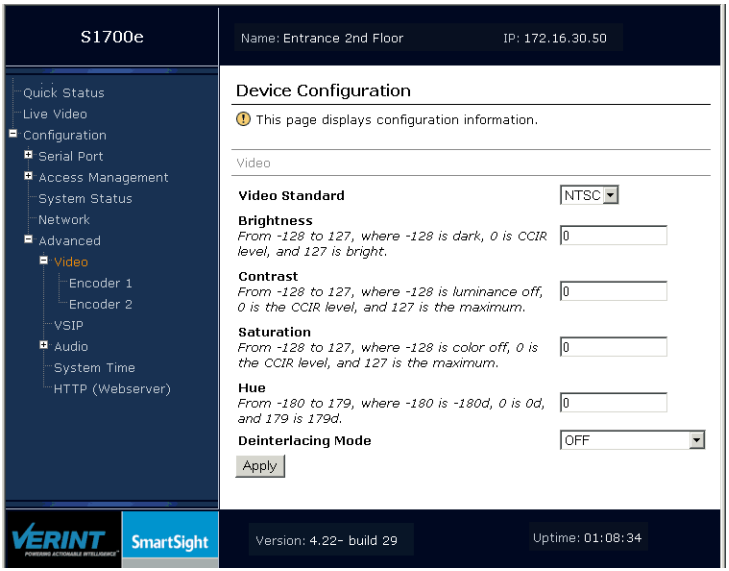
For more information about these settings, contact your network administrator.

Video

You can configure parameters relative to the encoding of video in the device. For more information about the video parameters, refer to the *SConfigurator User Guide*.

Common

The parameters common to all video functions of the device are:

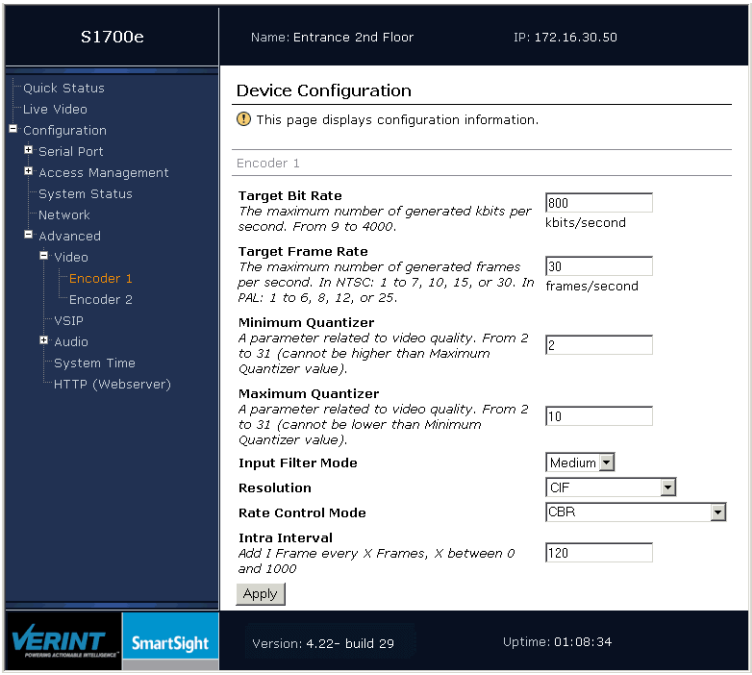


- Video Standard—The analog display standard.
- Brightness—The total amount of light in a color.
- Contrast—The range of colors in the image.
- Saturation—The intensity of the colors in the image.

- Hue—The relative amounts of red, green, and blue in a color.
- Deinterlacing Mode—The indication of whether the video will be deinterlaced, that is, converted to a progressive scan image.

Encoders

For each encoder, the video parameters are:

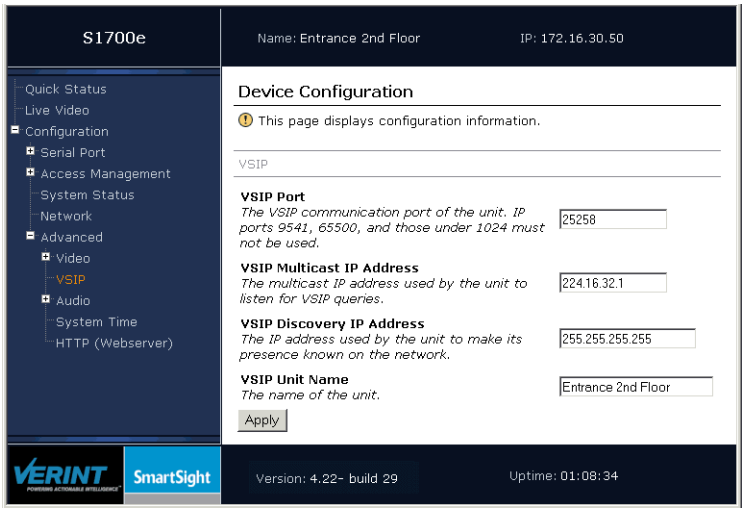


- Target Bit Rate—The maximum number of bits per second generated by the device. Valid bit rates range from 10 to 4000 kbps.
- Target Frame Rate—The maximum number of frames per seconds (fps) that will be encoded and transferred by the transmitter. This parameter can be set to 1 to 7, 10, 15, or 30 fps in NTSC mode and 1 to 6, 8, 12, or 25 fps in PAL mode.
- Minimum Quantizer—A parameter related to video quality. The value range is from 2 to 31.

- Maximum Quantizer—A parameter related to video quality. The value range is from 2 to 31.
- Input Filter Mode—The level of filtering applied to the video signal before it is encoded, helping to remove high frequency noise from lower quality cameras or noisy video feeds.
- Resolution—The number of pixels (columns * lines) for each picture of the video sequence.
- Rate Control Mode—The mode controlling the bit rate variation. The available modes are:
  - CBR—The Constant Bit Rate mode is the most effective to maintain the target bit rate. Video quality may suffer and the frame rate may decrease. This mode should be used when transmitting video over networks that have very limited bandwidths, and with an intra interval value of 0.
  - CFR (Constant Frame Rate)—This mode maintains the target frame rate. Video quality may suffer and the bit rate may exceed the target value.
  - Nextiva Storage—This is the optimized mode to be used only for the Nextiva enterprise video management software.
- Intra Interval—The frequency at which a complete video frame (called *I-frame*) is sent by the encoder. Possible values are in the 0–1000 range. A value of 0 indicates that no I-frame will be sent automatically by the device; a value of X means that a complete image refresh will occur every X frames.

VSIP

You can set the following parameters related to the VSIP proprietary communication protocol:



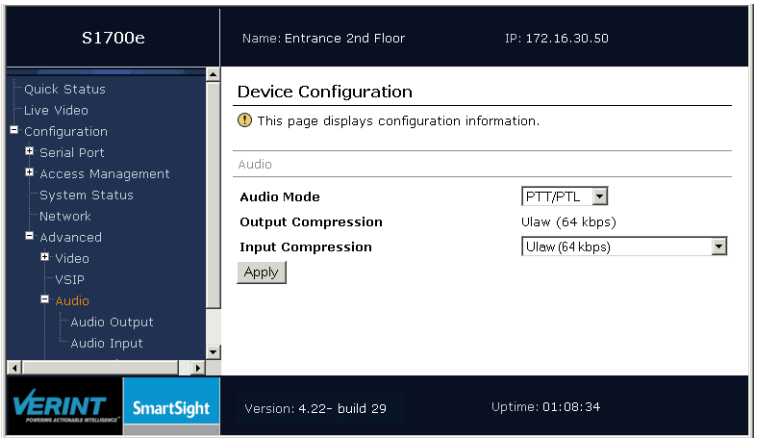
- VSIP Port—The communication port used by the device. The default value of all Nextiva devices is 5510.

  Note: VSIP ports 9541, 65500, and those under 1024 are reserved and should not be used, not even for serial port, video, or audio communication. The maximum value is 65535.

- VSIP Multicast IP Address—The IP address used by the device to listen for VSIP queries. The current multicast address is 224.16.32.1 and should not be changed.
- VSIP Discovery IP Address—The IP address used by the device to make its presence known with the broadcast method. The broadcast address is 255.255.255.255.
- VSIP Unit Name—The name of the device.

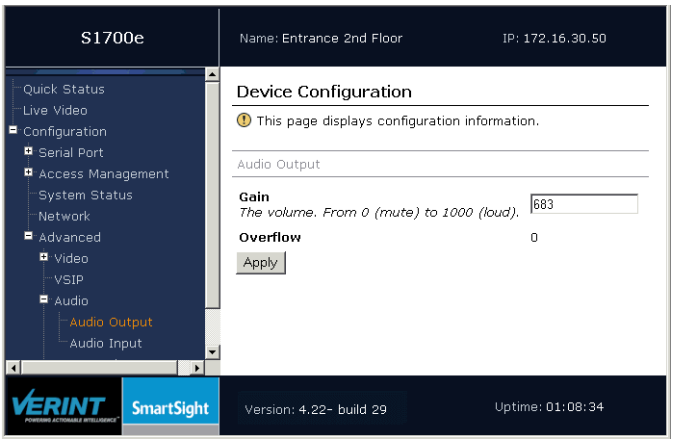
Audio

If your device has audio capabilities, you can set general parameters, as well as specific values for the audio input and output. The general parameters are:

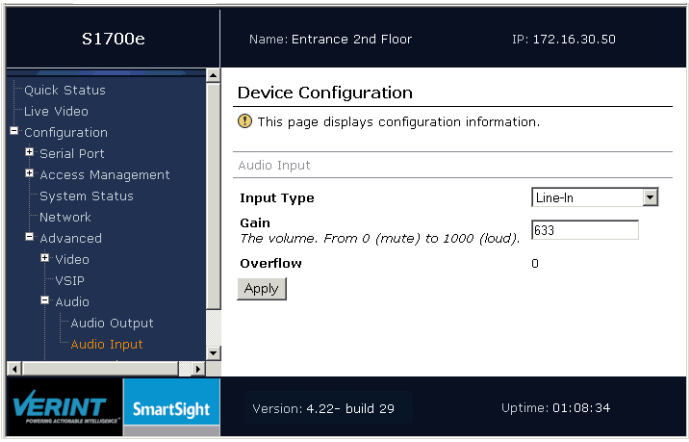


- Audio Mode—The audio transmission mode.
- Output Compression—The transfer mode for the audio data of the remote device.
- Input Compression—The transfer mode for the audio data of the local device.

The audio output parameters are:



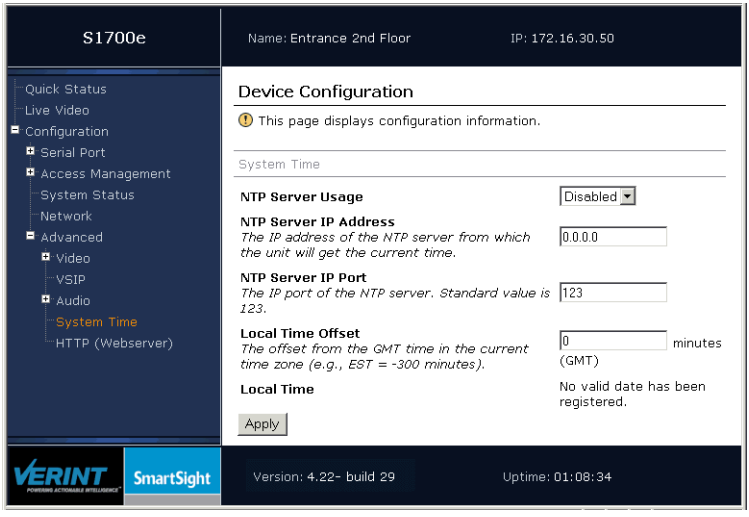
The parameters for audio input are:



- Input Type—The type of your audio source.
- Gain—The control for the volume.

System Time

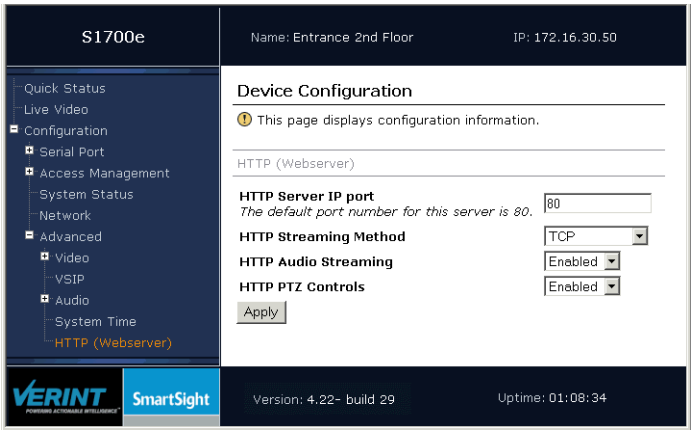
You can set the following parameters relative to the system time:



- NTP Server Usage—To enable or disable the use of the Network Time Protocol (NTP) to get the current time. NTP uses GMT to synchronize device clock time.
- NTP Server IP Address—The IP address of the NTP server from which the device will get the current time.
- NTP Server IP Port—The IP port of the NTP server. Default is 123.
- Local Time Offset—The offset in minutes from the GMT time in the current time zone (for instance, the offset for the Eastern Standard Time is -300 minutes).

HTTP (Webserver)

A series of configuration parameters are relative to the web interface itself:



Note: If you change any of these parameters, you must refresh the web page (for instance, by pressing F5).

- HTTP Server IP Port—The port number of the HTTP server. Default is 80.
- HTTP Streaming Method—The protocol used for transmitting video.

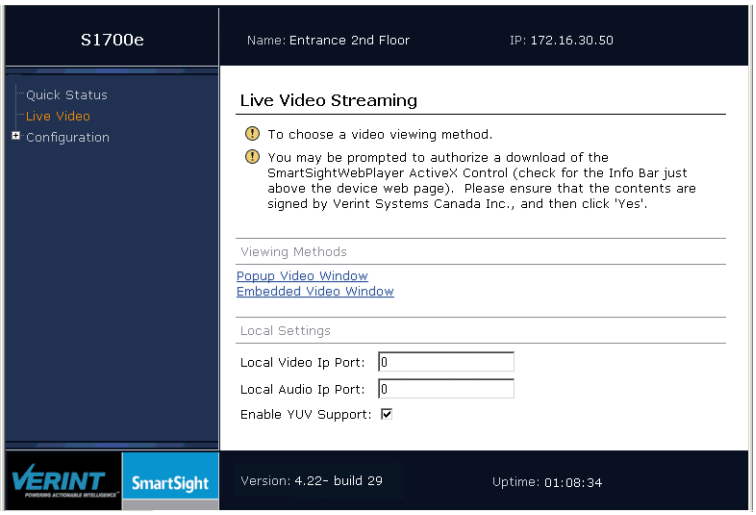
- HTTP Audio Streaming—To enable or disable the transmission of audio data.

  If you enable audio streaming on your computer, you may experience a click every 10 seconds. To stop it, remove the sound with a Control Panel utility: Open **Sounds and Multimedia**; in the Sounds tab, locate the **Windows Explorer** category, then select **Start Navigation**; change its sound to **(None)**.

- HTTP PTZ Controls—To enable or disable the transmission of PTZ data.

Viewing Live Video

You can view the stream coming out of the first encoder of the video source connected to the transmitter using one of the two available viewing methods, popup or embedded.


S1700e
Name: Entrance 2nd Floor
IP: 172.16.30.50
Quick Status
Live Video
Configuration
Live Video Streaming
To choose a video viewing method.
You may be prompted to authorize a download of the SmartSightWebPlayer ActiveX Control (check for the Info Bar just above the device web page). Please ensure that the contents are signed by Verint Systems Canada Inc., and then click 'Yes'.
Viewing Methods
Popup Video Window
Embedded Video Window
Local Settings
Local Video Ip Port: 0
Local Audio Ip Port: 0
Enable YUV Support:
VERINT
SmartSight
Version: 4.22- build 29
Uptime: 01:08:34

Before viewing live video on your computer, you may need to set up the following parameters:

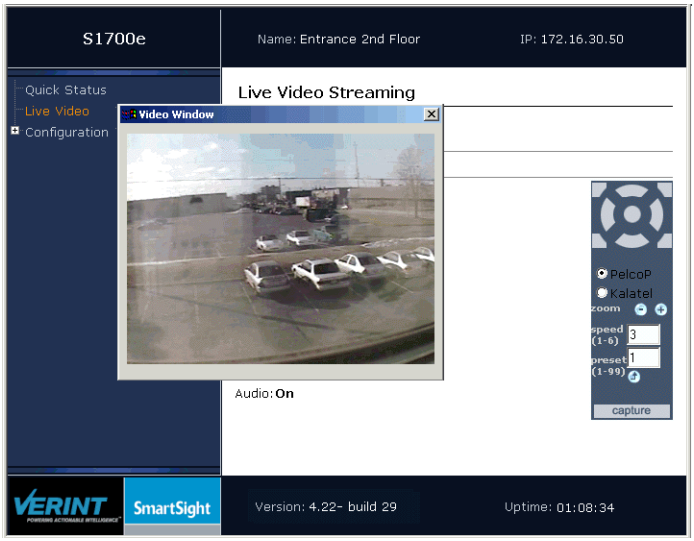
Note: Unless you need to use a specific port, it is recommended to keep the default value in the Local Video IP Port and Local Audio IP Port boxes.

- Local Video IP Port—The port number on your computer that will receive video.

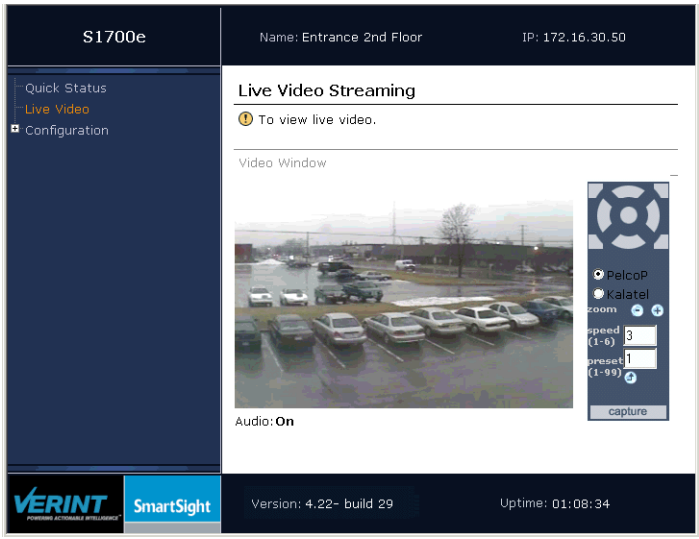
- Local Audio IP Port—The port number on your computer that will receive audio.
- Enable YUV Support—The indicator of whether YUV video conversion will be used. Most graphics video cards support YUV.

Presentation Windows

If you choose Popup Video Window, the video will be displayed in a separate window:

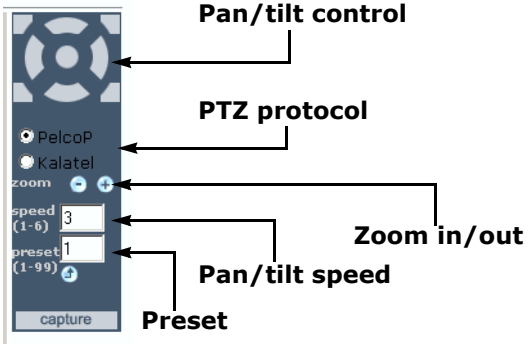


With an embedded window, the video will be displayed directly on the web page. For example:



PTZ Controls

The PTZ controls allow you to manage the movements of the active camera and to specify zoom values:



The control buttons allow you to pan (left or right) or tilt (up or down) the camera.

The + and - buttons allow you to zoom in or out respectively. You can also determine the camera pan-tilt speed by entering a number between 1 (slower) and 6 (faster).

You can also use the preset advanced function on automated PTZ cameras.

To send a copy of the video stream to the Windows clipboard, click **capture**.

A

Factory Default Configuration

The S1700e series is programmed at the factory with the following configuration:

Type	Configuration
Serial port	■ Bit rate: 4800 bauds ■ Parity: none ■ RS-422/485 operating mode: RS-422 4-wire
Access management	■ User accounts: Disabled ■ Telnet sessions: Enabled ■ IP firmware update: Enabled ■ Global security profile: Disabled ■ SSL passkey: <empty>
Network	■ DHCP configuration: Disabled ■ IP address: 169.254.*.* (MAC address of the device) ■ Subnet mask: 255.255.0.0 ■ Gateway: 169.254.*.* (MAC address of the device)
Video settings (North America)	■ Target frame rate: 30 fps ■ Target bit rate: 800 kbps ■ Resolution: CIF (352 x 240) ■ Maximum quantizer: 24 ■ Video standard: NTSC
Video settings (Europe)	■ Target frame rate: 25 fps ■ Target bit rate: 800 kbps ■ Resolution: CIF (352 x 288) ■ Maximum quantizer: 24 ■ Video standard: PAL
VSIP	■ VSIP Port: 5510 ■ VSIP Multicast IP Address: 224.16.32.1 ■ VSIP Discovery IP Address: 255.255.255.255

B

DTE and DCE Connections

Before connecting a Nextiva edge device to other serial equipment, you need to determine if they are DTE (data terminal equipment) or DCE (data communication equipment).

Here are examples of both equipment types:

- DCE—Nextiva edge devices, modems
- DTE—Computers, switches, multiplexers, cameras, keyboards

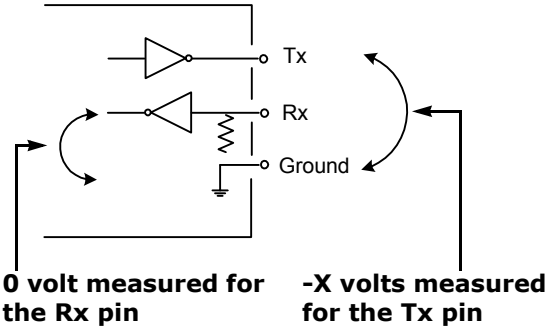
In the following descriptions:

- Voltage is measured when no data is transferred on the Rx and Tx pins.
- *-X volts* represents a negative voltage value.

Data Terminal Equipment

DTE modules have the following electrical-level setup:

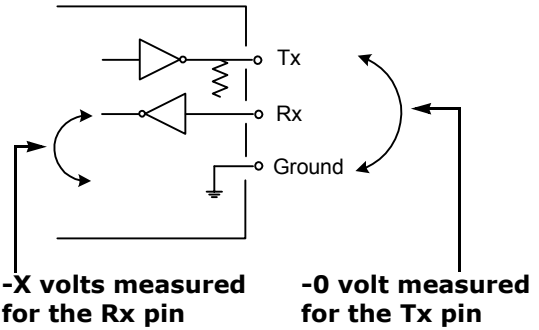
Pin number	Signal	Measured voltage
3	Tx	-X volts
2	Rx	0 volt



Data Communication Equipment

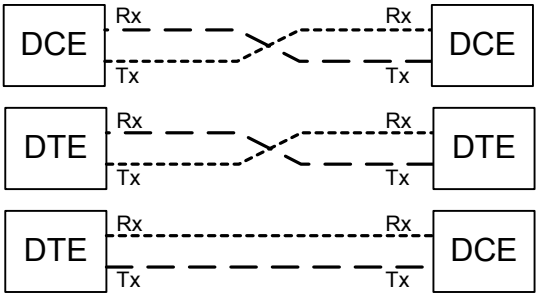
DCE modules have the following electrical-level setup:

Pin number	Signal	Measured voltage
3	Tx	0 volt
2	Rx	-X volts



Connecting DTE and DCE

When connecting two modules of the same type, you have to cross the data wires to create proper communication. On the other hand, when connecting a DTE with a DCE, a straight cable is required.



C

DHCP Support and APIPA

DHCP (Dynamic Host Configuration Protocol) allows devices and computers connected to a network to automatically get a valid IP configuration from a dedicated server.

The APIPA (Automatic Private IP Addressing) scheme, available on the Windows operating systems, enables a device to assign itself a temporary IP address.

At startup, an edge device searches for a valid IP network configuration. The device requires this configuration prior to starting its functions. The network configuration for Nextiva devices consists of:

- An IP address
- A subnet mask
- A gateway

The device first looks in its local memory. If no configuration is found, it tries to contact a DHCP server. If DHCP configuration fails—if the device does not find a server or if it cannot get a configuration from it within one minute—the device assigns itself temporary network settings based on the APIPA addressing scheme. This scheme allows a device to find a unique IP address until it receives a complete network configuration, either manually or from a DHCP server.

A device in APIPA mode does not reside on the same subnet as the other devices on the IP network; therefore, it may not be able to see them or be visible to them. Devices use the following temporary APIPA configuration:

- IP address: 169.254. *. *
- Subnet mask: 255.255.0.0
- Gateway: 169.254. *. *

The *. * portion is based on the MAC address of the device.

A device is in APIPA mode:

- The first time it boots up
- After receiving a duplicate IP address
- After a factory reset
- When the DHCP server does not have any available IP addresses

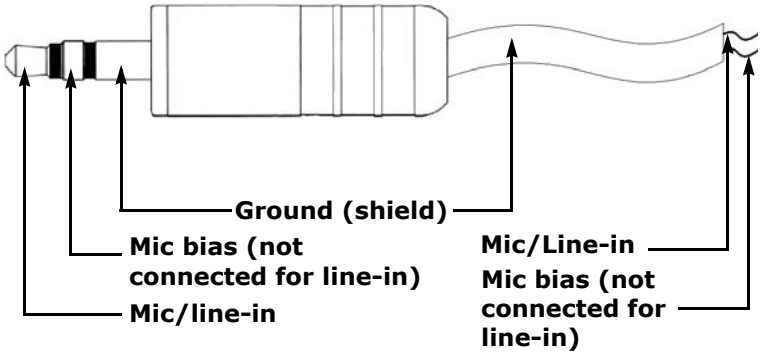
DHCP configuration is automatically disabled:

- After a firmware upgrade
- After a factory reset

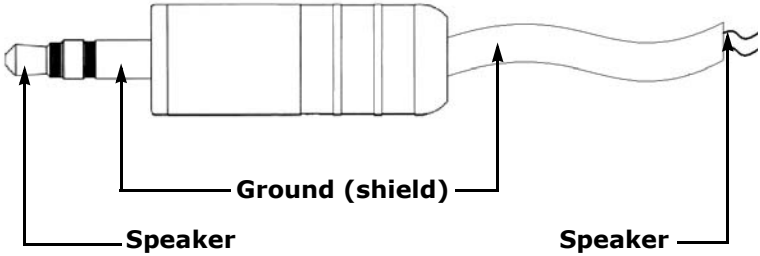
D

Audio Pinouts

Here is the pinout of the 3.5 mm stereo jacks for audio input:



For audio output, the jacks are configured the following way:



E

CLI Access

You may need to access the command line interface (CLI) of an edge device to perform troubleshooting tasks, typically with the assistance of a Verint Video Solutions customer service specialist. The CLI is hierarchically organized, with menus, sub-menus, and individual options representing configuration parameters.

You can access the CLI through SConfigurator the following ways:

- With a network connection and the Telnet utility
- With a serial connection

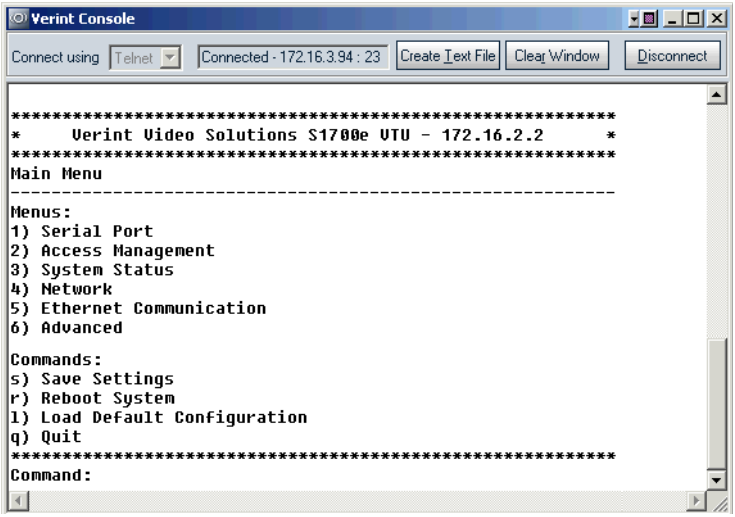
Network Connection

Note: Ensure that your computer and the S1700e device are in the same IP subnet.

To enter the CLI with Telnet:

1. Open SConfigurator.
2. In the Units tab, discover the devices.
3. Select the desired device, then click **Telnet**.

   The CLI main menu appears in the Verint Console window.



   The CLI has a timeout that is triggered after three minutes of inactivity. When the timeout occurs:

   - You lose access to the command line.
   - The "Thank you for using the Verint Video Solutions CLI" message appears at the command line.
   - The Verint Console window becomes disabled.

- The Disconnect button switches to Connect.

4. To reactivate the CLI after a timeout, click **Connect**.
5. To work through the CLI menu structure, follow these guidelines:
   - To execute a command or open a menu, type in the corresponding letter or number, then press **Enter**.
   - To return to the previous menu, enter **p**.
6. To end the CLI work session:
   a. Save the settings by entering **s** at the main menu, then pressing **Enter**.
   b. Exit the CLI by entering **q** at the main menu, then pressing **Enter**.

      Depending on the changed settings, the device may perform a soft boot.
   c. Close the Verint Console window.

      Warning: Do not use the Disconnect button to exit the CLI, since it does not save your settings.

Serial Connection

You can use the SConfigurator console to easily access the CLI through a serial connection.

To access the CLI with the SConfigurator console:

1. Connect the S1700e device to a COM port of the computer using a serial cable.
2. Start SConfigurator.

   The SConfigurator window appears.
3. In the General tab, click **Console**.

   The Verint Console window appears (see page 58).
4. In the **Connect using** list, select the COM port used to communicate with the device.
5. Click **Connect**.

The CLI main menu appears.

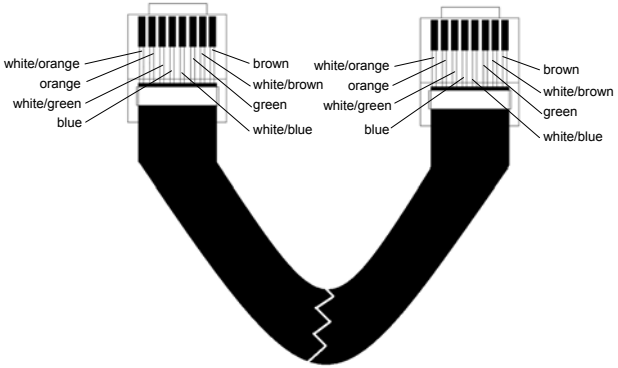
F

RJ-45 Ethernet Cables

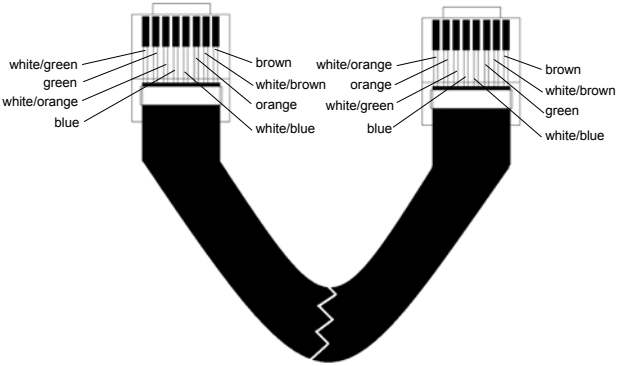
Depending on whether the device is integrated on a network or not, the Ethernet cable varies:

- If on a network, use a straight-through cable.
- To link it directly to a computer, use a crossover cable.

Here is the bottom view of the RJ-45 connectors on a straight-through cable:



Here is the bottom view of the RJ-45 connectors on a crossover cable:



G

Technical Specifications

Here are the S1700e technical specifications:

Video	Compression	MPEG-4-based and MPEG-4 ISO 14496-2 compliant
	Frame rate	Up to 30 frames or 60 fields per second in NTSC (25 frames or 50 fields in PAL), programmable (full motion)
	Input	1 composite, 1 Vpp into 75 ohms
	Resolution	Scalable from 176 x 128 to 704 x 480 NTSC pixels (176 x 144 to 704 x 576 PAL pixels)
	Standard	NTSC or PAL
	Connectors	BNC female
	Bandwidth	Configurable between 30 kbps and 6 Mbps
Serial Port	Electrical levels	Port 1: RS-232 (230 kbps max.) Port 2: RS-422/485 2/4 wires (230 kbps max.)
	Connectors	Port 1: DB-9 female Port 2: pluggable screw-terminal strip
	Operating mode	Transparent serial port supporting any asynchronous serial protocol
Alarm and audio	Alarm input	3 dry contacts
	Alarm output	1 relay contact (48V AC/DC at 100 mA max.)
	Bidirectional audio	Input: -20 to -3 dBV into 30 kohm Output: -45 to -3 dBV into 8 ohms min.
	Audio connectors	One set of 0.14 inch (3.5 mm) input and output stereo jacks
Network	Interface	Ethernet 10/100Base-T
	Connector	RJ-45 jack
	Protocols	Transport: RTP/IP, UDP/IP, TCP/IP, multicast IP Others: DNS and DHCP client
	Security	SSL-based authentication
Power	PoE	PoE 802.3af
	non-PoE	7.5W max. (625 mA at 12V DC)

Physical	Enclosure	Metal case with flange mount (black color)
	Size	4.5L x 5.6W x 1.25H inches (115L x 142W x 32H millimeters)
	Weight	0.84 lb. (0.38 kg)
	Environment	S1700e: 32°F to 122°F (0°C to 50°C) S1700e-XT: -22°F to 140°F (-30°C to 60°C)
	Humidity	95% non condensing at 122°F (50°C)
Management	Configuration	Local via the serial port using any ASCII terminal Remote using nDVR, Nextiva, SConfigurator, or Telnet
Certification/ Regulation	USA	FCC part 15 (subpart B, class A)
	Canada	ICES-003/NMB-003
	Europe	CE marked, EN 55022:1998 Class A, EN 55024

Glossary

This glossary is common to the Nextiva line of products.

Access Point A device acting as a communication switch for connecting wireless edge devices to a wired LAN. Access points are mainly used with wireless transmitters to transfer wireless content onto the wired IP network.

APIPA (Automatic Private IP Addressing) A feature of Windows-based operating systems that enables a device to automatically assign itself an IP address when there is no Dynamic Host Configuration Protocol (DHCP) server available to perform that function. Also known as *AutoIP*.

Bridge A device linking a wireless network to a wired Ethernet network. The newest Nextiva bridge is the S3100.

Camera See *S2500e*.

CCTV (closed circuit television) A television system in which signals are not publicly distributed; cameras are connected to television monitors in a limited area such as a store, an office building, or on a college campus. CCTV is commonly used in surveillance systems.

CIF (common image format) A video format that easily supports both NTSC and PAL signals. Many CIF flavors are available, including CIF, QCIF, 2CIF, and 4CIF. Each flavor corresponds to a specific number of lines and columns per video frame.

CLI (command line interface) A textual user interface in which the user responds to a prompt by typing a command.

Codec (coder/decoder) A device that encodes or decodes a signal.

Configuration Assistant A proprietary graphical program used to configure and update the firmware of the S1100 edge devices.

DCE (data communication equipment) In an RS-232 communication channel, a device that connects to the RS-232 interface. Nextiva edge devices and modems are DCE.

Decoder See *Receiver*.

DHCP (Dynamic Host Configuration Protocol) A communication protocol that lets network administrators manage centrally and automate the assignment of Internet Protocol (IP) addresses in a network.

DTE (data terminal equipment) In an RS-232 communication channel, the device to which the RS-232 interface connects. Computers, switches, multiplexers, cameras, and keyboards are DTE.

DVR (digital video recorder) A device (usually a computer) that acts like a VCR in that it has the ability to record and play back video images. The DVR takes the feed from a camera and records it into a digital format on a storage device which is most commonly the hard drive.

Edge Device A Nextiva device transmitting or receiving video signals through an IP network. The Nextiva wireless devices are the S1000w and S1100w; the wired devices are the S1500e series, S1600e, S1700e series, S1708e series, and S2500e.

Encoder See *Transmitter*.

Ethernet A local area network (LAN) architecture using a bus or star topology and supporting data transfer rates of 10, 100, and 1000 Mbps. It is one of the most widely implemented LAN standards. The 802.11 protocols are often referred to as "wireless Ethernet."

Firmware Software stored in read-only memory (ROM) or programmable ROM (PROM), therefore becoming a permanent part of a computing device.

IP (Internet Protocol) The network layer for the TCP/IP protocol suite widely used on Ethernet networks.

IP Camera See *S2500e*.

LAN (local area network) A computer network that spans a relatively small area. A LAN can connect workstations, personal computers, and surveillance equipment (like edge devices). See also *WAN*.

MPEG-4 A graphics and video lossy compression algorithm standard that is derived from MPEG-1, MPEG-2, and H.263. MPEG-4 extends these earlier algorithms with synthesis of speech and video, fractal compression, computer visualization, and artificial intelligence-based image processing techniques.

Multicast Communication between a sender and multiple receivers on a network; the devices can be located across multiple subnets, but not through the Internet. Multicast is a set of protocols using UDP/IP for transport.

nDVR The SmartSight video management and storage software. This graphical product is used in conjunction with wired and wireless edge devices.

Nextiva The Verint next generation, enterprise-class video management and analytics platform. Nextiva combines enterprise and security data with mission-critical video, leveraging existing investments in IT infrastructure, security, and business systems to enhance security and improve operational performance.

NTSC (National Television Standards Committee) The North American standard (525-line interlaced raster-scanned video) for the generation, transmission, and reception of television signals. In addition to North America, the NTSC standard is used in Central America, a number of South American countries, and some Asian countries, including Japan. Compare with *PAL*.

NTP (Network Time Protocol) A protocol designed to synchronize the clocks of devices over a network.

OSD (on-screen display) Status information displayed on the video monitor connected to a receiver edge device.

PAL (Phase Alternation by Line) A television signal standard (625 lines, 50 Hz, 220V primary power) used in the United Kingdom, much of western Europe, several South American countries, some Middle East and Asian countries, several African countries, Australia, New Zealand, and other Pacific island countries. Compare with *NTSC*.

PTL (push-to-listen) In a two-way system, the communication mode in which the listener must push a button while listening.

PTT (push-to-talk) In a two-way system, the communication mode in which the talker must push a button while talking.

PTZ Camera (pan-tilt-zoom) An electronic camera that can be rotated left, right, up, or down as well as zoomed in to get a magnified view of an object or area. A PTZ camera monitors a larger area than a fixed camera.

QoS (Quality of Service) A set of low-level networking protocols giving higher priority to more important data flows while ensuring that the less important ones do not fail.

Receiver A device converting a digital video signal into an analog form. Also called *decoder*.

Repeater A range extender for wireless links. The Nextiva repeater is made up of two S3100 bridges.

RF (radio frequency) Any frequency within the electromagnetic spectrum associated with radio wave propagation. When a modulated signal is supplied to an antenna, an electromagnetic field is created that is able to propagate through space. Many wireless technologies are based on RF field propagation.

RS-232 A standard interface approved by the Electronic Industries Alliance (EIA) for connecting serial devices.

RS-422 A standard interface approved by the Electronic Industries Alliance (EIA) for connecting serial devices, designed to replace the older RS-232 standard because it supports higher data rates and greater immunity to electrical interference.

RS-485 An Electronics Industry Alliance (EIA) standard for multipoint communications.

S1000 Series The series of secure outdoor wireless video systems (one receiver and one transmitter per system). The series covers the 2.4 GHz band in North America and Europe and the 5 GHz band in North America. Starting with firmware release 3.20, the S1000 series is replaced by the S1100 edge devices.

S1000w The outdoor wireless video transmitter operating on the 2.4 GHz frequency band.

S1100 The newest series of secure outdoor wireless video systems (one receiver and one transmitter per system) covering the 2.4 and 5 GHz bands in North America and Europe.

S1100w The multiband (2.4 and 5 GHz) outdoor wireless video transmitter operating in North America and Europe.

S1500e Series The series of wired edge devices (receivers and transmitters) designed for video monitoring and surveillance over IP networks.

S1700e Series The series of wired video transmitters designed for video monitoring and surveillance over IP networks, offering DVD-quality video and power over Ethernet. The transmitter in the series offers one video input and web access.

S1708e Series The series of wired video transmitters designed for a variety of video monitoring and surveillance applications in which a high concentration of cameras terminates within the same area. The transmitters in the series offer 4, 8, 12, or 24 video inputs.

S1900e The highly compact, single-input video transmitter designed for video monitoring and surveillance over IP networks, offering DVD-quality video and web access.

S1900e-Vicon The board holding the S1900e compact IP technology, to be included into Vicon SurveyorVFT dome cameras.

S2500e The MPEG-4-compliant professional IP camera integrating a video camera and an Ethernet encoder in the same compact enclosure.

S3100 The outdoor, wireless, digital video bridging device. It has many uses, including linking edge devices (wireless or wired) to an Ethernet LAN and acting as a range extender.

SConfigurator A proprietary graphical program used to configure and update the firmware of edge device and outdoor wireless bridge devices.

Serial Port An interface that can be used for serial communication, in which only one bit is transmitted at a time. A serial port is a general-purpose interface that can be used for almost any type of device.

SSL (Secure Sockets Layer) A commonly used protocol for transmitting private documents via the Internet. SSL works by using a public key to encrypt data that is transferred over the SSL connection. The SSL protocol secures the following data: I/O, serial port, and VSIP communication; it does not apply to audio and video transmission.

Transceiver (transmitter/receiver) A device that both transmits and receives analog or digital signals.

Transmitter A device sending video signals captured with a connected camera to a receiver. The transmitter converts the analog signal into a digital form before transmitting it. Also called *encoder*.

VSIP (Video Services over IP) A proprietary communication protocol for sending messages between a computer and a Nextiva edge device, or between two devices.

WAN (wide area network) A computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more local area networks (LANs).

WEP (Wired Equivalent Privacy) A security protocol for wireless local area networks (WLANs) defined in the 802.11b standard. It is designed to afford wireless networks the same level of protection as a comparable wired network.

Wireless Cell A group of wireless devices that communicate together on the same radio frequency channel and share the same wireless passkey.

Wireless Transmission A technology in which electronic devices send information to receivers using radio waves rather than wiring.

Index

Numerics

3.5 mm plug 19, 56

A

abnormal power-up conditions 24
access management 31
account, user 31
address, IP. *See* IP address.
administrator account 31
alarm configuration 19
APIPA addressing scheme 10, 53
audio
  connectors 19, 56
  input/output 19–21
  settings 40
  specifications 21

B

bidirectional audio 19
bit rate
  serial port 31
  video 37

C

cable. *See* Ethernet cable *or* power cable, camera.
camera
  control with the web interface 45
  data port configuration 2
  losing a connection 23
  powering 15
casing of the device 4
CD, Utilities viii
certificate, SSL 2
characteristics of the device 2
CLI (command line interface) 57–59
compliance 79
computer requirements 8
configuration
  alarm 21
  audio 19–21
  camera data port 2
  default 22, 47
  device, initial 8–13
  I/O 19–21
  web interface 30–43
connection
  audio 19, 20, 56
  to a camera, losing 23
  DCE/DTE 49
  Ethernet cable 61
  multidrop 18
  PoE 8
  point-to-point 13
  power. *See* power connection.
  RS-232 16
  RS-422/485 17
console, SConfigurator 59
crossover Ethernet cable 9, 62
customer service ix

D

DB-9 connector pinout 16
DC Pwr poles 8, 15
DCE (data communication equipment) 49
default configuration 22, 47
DHCP (Dynamic Host Configuration Protocol) 12, 35, 53
downgrade of firmware 22
DSCP (Differentiated Service Code Points) 23
DTE (data terminal equipment) 49
duplex audio 19
duplicate IP address 11

E

EIA-232. *See* RS-232.

EIA-422. *See* RS-422/485.
enclosure of the device 4
encoder use 13
equipment list 4
Ethernet cable
  maximum length 9
  pinouts 61
  RJ-45 connector 4
  usage 9
event configuration 19
extranet, Verint Video Solutions ix

F

factory default configuration 22, 47
features of the device 2
firmware update
  downgrading 22
  performing 22
  preventing 33, 34
frame rate 3, 37
full duplex audio 19

G

gateway 35
global security profile 34
GMT (Greenwich Mean Time) 41

H

hardware reset 22
HTTP access 33
HTTP settings for the web interface 42

I

I/O, alarm or audio 19–21
injector, PoE 8
installation 15
IP address
  APIPA 53
  duplicate 11
  setting 10, 35
  temporary 53

L

LED, status 24
length of Ethernet cable 9
list of equipment 4
live video 43–46
loading default configuration 22, 47
local settings for live viewing 43
losing connection to a camera 23

M

mask, subnet 35
maximum length of Ethernet cable 9
microphone, multimedia 20
multidrop connection 18
multimedia microphone 20

N

name of device 39
network settings 12, 35
NTP (Network Time Protocol) 41

O

options, when ordering a device 4
output, alarm or audio 19–21

P

panel of device 4
pan-tilt-zoom. *See* PTZ (pan-tilt-zoom).
password
  for serial connection 31
  SSL 34
  for Telnet connection 31
  for web interface 31
pinout
  DB-9 connector 16
  Ethernet cable 61
  serial port 16
PoE (power-over-Ethernet) injector 8
point-to-point connection 13
port, serial. *See* serial port.
power cable, camera 15

power connection
  camera 15
  device 8, 10
power requirements 2
power supply with PoE kit, warning 8
power-over-Ethernet (PoE) injector 8
power-up conditions 24
preventing access 33
protocols supported, serial 16
PTL (push-to-listen) 19
PTT (push-to-talk) 19
PTZ (pan-tilt-zoom)
  controls 45
  supported protocols 27

Q

Quality of Service (QoS) 23

R

rate control 38
red/blue display 23
requirements
  computer 8
  power 2
Reset button 23
reset to factory default 22, 47
resolution, video 3, 38
RJ-45 Ethernet cable. *See* Ethernet cable.
RS-232 16, 30
RS-422/485 17, 31

S

SConfigurator
  configuring the device 8, 11–13
  console 59
  creating a connection 14
secure HTTP access 33
security settings 33
serial connection to access the CLI 59
serial port 16, 30
serial protocols supported 16
shipment list 4
SmartSight Utilities CD viii
specifications
  audio 21
  technical 63–65
SSL (Secure Sockets Layer)
  certificate 2
  creating a secure connection 34
  passkey 34
status LED 24
status of the device 34
straight-through Ethernet cable 9, 62
subnet mask 35
support, technical ix
system status 34
system time 41

T

technical specifications 63–65
technical support ix
Telnet
  accessing the CLI 58
  preventing access 33
temporary IP address 53
tilt control, PTZ 45
time, system 41
ToS (Type of Service) 23

U

updating firmware
  downgrading 22
  performing 22
  preventing 33, 34
user account 31
Utilities CD viii

V

Verint Video Solutions web site viii
video settings 3, 36–38
video, live 43–46
VSIP settings 39

W

warranty ix

web client account 31
web interface
  accessing with a password 31
  after a firmware update 28
  camera control 45
  for configuration 30–42
  HTTP settings 42
  live video 43–46
  opening 28
  preventing access 33
  secure access 34
web site, Verint Video
    Solutions viii

Z

zoom control, PTZ 45

Compliance

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Industry Canada Statement

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

EN 55022 Statement

This is to certify that the Nextiva Model S1700e Ethernet video server is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/ECC, Article 4a. Conformity is declared by the application of EN55022 Class A (CISPR 22).

Declaration of Conformity

Manufacturer:

Verint Systems Inc.
1800 Berlier
Laval, Québec
H7L 4S4
Canada

Declares under sole responsibility that the product:

Product name: Ethernet video server
Model number: S1700e

To which this declaration relates is in conformity with the following standards or other documents:

EMC Directive 89/336/EEC:

EN55022:1998 class A

EN55024:1998

EN 61000-4-3:1996	3V/m
EN 61000-4-6:1996	3Vrms
EN 61000-4-2:1995	4kV CD, 8 kV AD
EN 61000-4-4:1995	1kV (power), 500V (signal)
EN 61000-4-11:1994	
EN 61000-4-5:1995	2kV L-E, 1kV L-L
ENV50204:1995	

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

November 24th, 2004
Laval, Canada

Willie Kouncar
Vice President, Product Development
Verint Video Solutions

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